Application No. 10/090,746
Reply to Office Action of December 8, 2005
RCE filed herewith

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An X-ray diagnostic apparatus comprising:

a memory which stores a plurality of images;

a designating section which designates a region of interest on not less than one ~~image~~ of [[a]] the plurality of ~~X-ray diagnostic~~ images ~~forming a moving image, when continuously displayed,~~ on the basis of an input from an operator;

a position estimating section which estimates corresponding areas on the remaining images of the plurality of images which correspond to the region of interest; and

a display section which displays the respective images in such a way as to shift the region of interest or the respective corresponding areas to an appropriate position.

2. (Currently Amended) The apparatus according to claim 1, wherein the plurality of ~~X-ray diagnostic~~ images are images acquired by rotation around an object to be examined.

3. (Original) The apparatus according to claim 1, wherein the corresponding region on each of the remaining images is determined on the basis of at least one of the designated region of interest, an angle of an imaging system corresponding to each image, a distance between an X-ray source and an X-ray detector image-receiving surface, and a detector size.

4. (Currently Amended) The apparatus according to claim 1, wherein when areas of interest are designated on not less than two ~~X-ray diagnostic~~ images, said position estimating section obtains a 3D position of a diagnosis target on the basis of straight lines connecting focal positions of an X-ray source in sensing the respective images on which the areas of interest are designated and the areas of interest, and projects the 3D position onto the

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remaining images of the plurality of images, thereby estimating the respective corresponding

areas.

5. (Currently Amended) The apparatus according to claim 1, wherein when areas of

interest are designated on not less than two ~~X-ray diagnostic~~ images, said position estimating

section calculates a locus of the areas of interest in the ~~moving~~ image by using a function on

the basis of the respective designated areas of interest, and obtains the corresponding areas on

the remaining images on the basis of the locus.

6. (Previously Presented) The apparatus according to claim 5, wherein said position

estimating section includes an interface which switches the function by manual operation.

7. (Original) The apparatus according to claim 5, wherein said position estimating

section selects a function to be used in accordance with the number of areas of interest

designated by an operator.

8. (Currently Amended) The apparatus according to claim 1, wherein said position

estimation section performs correlation value computation associated with pixel values in the

region of interest between not less than two adjacent images of the plurality of ~~X-ray~~

~~diagnostic~~ images, and obtains the corresponding areas on the respective remaining images

on the basis of the correlation values.

9. (Currently Amended) The apparatus according to claim 1, further comprising

display range adjusting section which adjusts a display range of an ~~X-ray diagnostic~~ image

after the shift processing by using a shutter having a predetermined shape.

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10. (Original) The apparatus according to claim 9, wherein the predetermined shape can be set to an arbitrary shape.

11. (Currently Amended) An X-ray diagnostic apparatus comprising:

a memory which stores a plurality of 2D images which constitute ~~forming a moving image of a predetermined diagnosis target when continuously displayed and~~ a 3D image of ~~the~~ a predetermined diagnosis target;

a designating section which allows an operator to designate a region of interest on the 3D image;

a position estimating section which estimates corresponding areas on the plurality of 2D images which correspond to the region of interest ~~on the basis of a position of the region of interest~~ designated on the 3D image; and

a display section which displays the respective images in such a way as to shift the region of interest or the respective corresponding areas to an appropriate position.

12. (Original) The apparatus according to claim 11, wherein the plurality of 2D images are images acquired by rotation around an object to be examined.

13. (Original) The apparatus according to claim 11, wherein each of the corresponding areas on the plurality of 2D images is determined on the basis of at least one of the designated region of interest, an angle of an imaging system corresponding to each image, a distance between an X-ray source and an X-ray detector image-receiving surface, and a detector size.

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14. (Original) The apparatus according to claim 11, further comprising display range adjusting section which adjusts a display range of a 2D image after the shift processing by using a shutter having a predetermined shape.

15. (Previously Presented) The apparatus according to claim 14, wherein the predetermined shape can be set to an arbitrary shape.

16. (Currently Amended) An image processor comprising:

a memory which stores a plurality of images ~~forming a moving image when continuously displayed~~;

a designating section which allows an operator to designate a region of interest on not less than one of the plurality of images;

a position estimating section which estimates corresponding areas on the remaining images of the plurality of images on the basis of a position of the designated region of interest; and

a display section which displays the respective images in such a way as to shift the region of interest or the respective corresponding areas to an appropriate position.

17. (Original) The processor according to claim 16, wherein the plurality of images are images acquired by rotation around an object to be examined.

18. (Currently Amended) The processor according to claim 16, wherein said position estimating section calculates a locus of the region of interest on the ~~moving~~ image by using a function on the basis of the designated region of interest, and obtains the corresponding areas on the remaining image on the basis of the locus.

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19. (Original) The processor according to claim 18, wherein said position estimating section includes an interface which switches the function by manual operation.

20. (Original) The processor according to claim 18, wherein said position estimating section selects a function to be used in accordance with the number of areas of interest designated by the operator.

21. (Previously Presented) The processor according to claim 16, wherein said position estimation section performs correlation value computation associated with pixel values in the region of interest between not less than two adjacent images of the plurality of X-ray diagnostic images, and obtains the corresponding areas on the respective remaining images on the basis of the correlation values.

22. (Original) The processor according to claim 16, further comprising a display range adjusting filter which adjusts a display range of an image after the shift processing by using a shutter having a predetermined shape.

23. (Original) The processor according to claim 22, wherein the predetermined shape can be set to an arbitrary shape.

24. (Currently Amended) An image processor comprising:

a memory which stores a plurality of 2D images which constitute ~~forming a moving image of a predetermined diagnosis target when continuously displayed, and~~ a 3D image of ~~the~~ a predetermined diagnosis target;

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a designating section which allows an operator to designate a region of interest on the

3D image;

a position estimating section which estimates corresponding areas on the plurality of

2D images which correspond to the region of interest ~~on the basis of a position of the region~~

~~of interest~~ designated on the 3D image; and

a display section which displays the respective images in such a way as to shift the

region of interest or the respective corresponding areas to an appropriate position.

25. (Original) The processor according to claim 24, wherein the plurality of 2D

images are images acquired by rotation around an object to be examined.

26. (Original) The processor according to claim 24, wherein each of the

corresponding areas on the plurality of 2D images is determined on the basis of at least one of

the designated region of interest, an angle of an imaging system corresponding to each image,

a distance between an X-ray source and an X-ray detector image-receiving surface, and a

detector size.

27. (Original) The processor according to claim 24, further comprising display range

adjusting means for adjusting a display range of a 2D image after the shift processing by

using a shutter having a predetermined shape.

28. (Original) The processor according to claim 27, wherein the predetermined shape

can be set to an arbitrary shape.